

CLAIMS

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is as follows:

- 1 1. A method for manipulating data from any environment in the world to
2 construct a database that can be used to generate definitions of the user's
3 physical environment including buildings, terrain and other site
4 parameters, comprising the steps of:
 - 5 (a) creating and formatting a plurality of objects defining an
6 environment of floors, walls, partitions, buildings, building complexes or
7 compounds, terrain, foliage or other sites or obstructions;
 - 8 (b) verifying the sufficiency of said plurality of objects to ensure a
9 useful definition of said environment and notifying a user of results of said
10 verification of sufficiency; and
 - 11 (c) generating a set of formatted data in a form transportable to and
12 usable by an engineering planning model or other application.
- 1 2. A method as recited in claim 1, said method further comprising at least
2 one of the steps:
 - 3 (d) inputting existing data, vectors or drawing objects, said existing
4 data, vectors or drawing objects either partially or fully describing said
5 environment; and
 - 6 (e) removing extraneous drawing objects to simplify said definition
7 of said environment;
- 8 wherein steps (d) and (e) may be performed before or after step (a),
9 if data exists that fully or partially defines said environment.
- 1 3. A method as recited in claim 2, wherein said existing data is in the form
2 of raster files, or in the form of vector files, wherein said raster files are

3 selected from the group consisting of Windows Bitmaps (BMP), Joint
4 Photographic Experts Group format (JPEG), Graphical Interchange Format
5 (GIF), Tagged-Image File Format (TIFF), Targa format (TGA), PICT, and
6 Postscript, and wherein said vector files are selected from the group
7 consisting of AutoCAD (DWG), AutoDesk (DXF) and Windows MetaFile
8 (WMF).

1 4. A method as recited in claim 1, said method further comprising the step
2 of rendering a three-dimensional view of said environment, wherein said
3 step of rendering a three-dimensional view may be performed at any time
4 after at least one of said plurality of objects has been created.

1 5. A method as recited in claim 4, wherein said rendering step includes the
2 step of selecting a three-dimensional view of a selected perspective of said
3 environment.

1 6. A method as recited in claim 1, wherein step (a) further comprises the
2 step of adjusting partition colors, and physical and electrical descriptions
3 of said partitions.

1 7. A method as recited in claim 1, wherein said formatted data defines said
2 environment and each said object is associated with at least one of the
3 group consisting of a specific location in said environment, an attenuation
4 factor, a color, a height, a surface roughness value, and a reflectivity value.

1 8. A method as recited in claim 1, wherein step (b) automatically prompts
2 a user to verify that each piece of necessary information to define said
3 environment has been added to said definition of said environment before
4 executing the verification of said each piece of necessary information, and
5 if said user answers in the negative, prompts said user to enter missing

6 information before proceeding.

1 9. A method as recited in claim 1, wherein said formatted data comprises
2 at least one vectorized drawing of said environment.

1 10. An apparatus for manipulating data from any environment in the world
2 to construct a database that can be used to generate definitions of the user's
3 physical environment including buildings, terrain and other site
4 parameters, comprising:

5 means for creating and formatting a plurality of objects defining an
6 environment of floors, walls, partitions, buildings, building complexes or
7 compounds, terrain, foliage or other sites or obstructions; and

8 means for generating a set of formatted data in a form transportable
9 to and usable by an engineering planning model or other application.

1 11. An apparatus as recited in claim 10, further comprising a means for
2 verifying the sufficiency of said plurality of objects to ensure a useful
3 definition of said environment and notifying a user of results of said
4 verification of sufficiency.

1 12. An apparatus as recited in claim 10, further comprising a means for
2 inputting existing data, vectors or drawing objects, said existing data,
3 vectors or drawing objects either partially or fully describing said
4 environment.